UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

SURGICAL INSTRUMENT SERVICE COMPANY, INC., Plaintiff/Counterclaim Defendant, v. **INTUITIVE SURGICAL, INC.,** Defendant/Counterclaim Plaintiff.	Case No. 3:21-cv-03496-VC JURY TRIAL DEMANDED

EXPERT DAMAGES REBUTTAL REPORT OF LOREN K. SMITH, PH.D.
January 18, 2023

HIGHLY CONFIDENTIAL—SUBJECT TO PROTECTIVE ORDER

TABLE OF CONTENTS

I. INTRODUCTION

A. QUALIFICATIONS

1. My name is Loren K. Smith. I am a Principal at The Brattle Group and have been an economic consultant since April 2013. From September 2005 to March 2013, I was a staff economist at the U.S. Federal Trade Commission ("FTC"). I received my Ph.D. in economics from the University of Virginia in 2006.

2. I specialize in the application of economic and econometric tools to antitrust and competition matters. I have taught economics and econometrics to undergraduates and graduate students at the University of Virginia and Johns Hopkins University. I have taught courses on the application of economic and econometric tools to antitrust matters to lawyers and economists of foreign antitrust agencies in South Africa, Hungary, and Brazil, and at Fordham University. My research has been published in leading economics and antitrust journals, including the Journal of Applied Econometrics, the Journal of Economics and Management Strategy, and Antitrust Source.

3. While at the FTC, I led economic investigations into high-profile mergers and conduct matters, including in healthcare generally and medical devices, specifically. I also supported litigation and settlement efforts. Since leaving the FTC for private practice, I have consulted with clients on government investigations, federal merger challenges, and private litigations in a wide variety of industries, including healthcare, retail, lodging, medical devices, and various consumer products and intermediate goods.

4. I have significant experience studying the economics of healthcare, including several matters that required detailed economic analyses of competition among healthcare suppliers and providers. On behalf of healthcare providers as well as for the government, I have analyzed the competitive impact of healthcare provider mergers, including numerous hospital mergers. I recently testified as the economic expert for the Plaintiffs in *FTC et al. v. Thomas Jefferson*

University et al.[1] Both at the FTC and in private practice, I have assessed unilateral conduct in the healthcare industry, including analyses of market definition, market power, conduct, effects and justifications.

5. I provided expert testimony in *Rebotix Repair LLC v. Intuitive Surgical, Inc.* and *Restore Robotics LLC, Restore Robotics Repair LLC, and Clif Parker Robotics LLC v. Intuitive Surgical, Inc*. In both cases, I submitted expert reports on (i) the profits to be disgorged from the plaintiffs and (ii) Intuitive's lost profits from the "[plaintiffs'] alleged false advertising, unfair competition, deceptive and unfair trade practices, and tortious interference with contract."[2] I also submitted expert reports addressing, from an economics perspective, the plaintiffs' allegations that Intuitive engaged in conduct to "monopoliz[e] trade in the worldwide and domestic aftermarkets for service of da Vinci surgical robots and the worldwide and domestic aftermarkets for service and replacement of EndoWrist surgical robotic instruments."[3] In *Rebotix Repair LLC v. Intuitive Surgical, Inc.*, I submitted an expert report responding to the damages analysis of the plaintiff's expert.[4]

6. My curriculum vitae, which provides additional details about my qualifications, including my prior testimony and publications, is provided in Exhibit A.

---

1 20-cv-03499, Pennsylvania Eastern District Court, September 15 and 16, and October 1, 2020.

2 Expert Report of Loren K. Smith, Ph.D., *Restore Robotics LLC and Restore Robotics Repair LLC v. Intuitive Surgical, Inc.*, Case No. 5:19-cv-55, August 20, 2021, ¶ 6. Expert Report of Loren K. Smith, Ph.D., *Rebotix Repair LLC v. Intuitive Surgical, Inc.*, Case No. 8:20-cv-02274, July 26, 2021, ¶ 6.

3 Expert Rebuttal Report of Loren K. Smith, Ph.D., *Restore Robotics LLC, Restore Robotics Repair LLC, and Clif Parker Robotics LLC v. Intuitive Surgical, Inc.*, Case No. 5:19-cv-55, September 27, 2021, ¶ 7. Expert Antitrust Merits Report of Loren K. Smith, Ph.D., *Rebotix Repair LLC v. Intuitive Surgical, Inc.*, Case No. 8:20-cv-02274, August 30, 2021, ¶ 7. Rebotix's claims did not include "service of da Vinci surgical robots."

4 Expert Damages Rebuttal Report of Loren K. Smith, Ph.D., *Rebotix Repair LLC v. Intuitive Surgical, Inc.*, Case No. 8:20-cv-02274, August 30, 2021, ¶ 7.

7. I submitted an expert report in this matter on December 2, 2022 that "quantif[ies] (i) SIS's profits to be disgorged; and (ii) Intuitive's lost profits from SIS's alleged false advertising, unfair competition, deceptive and unfair trade practices, and tortious interference with contract."[5] I am simultaneously to this Report submitting an expert report that reviews and analyzes the expert report submitted by Dr. Russell Lamb on behalf of Surgical Instrument Service Company, Inc. ("SIS" or "Plaintiff").[6]

B. ASSIGNMENT

8. I have been asked by counsel for Intuitive Surgical, Inc. ("Intuitive") to review the expert report submitted by Mr. Richard F. Bero on behalf of SIS.[7] SIS alleges that the purported antitrust misconduct challenged in its Complaint has allowed Intuitive to "leverage its monopoly power in robots for use in minimally invasive soft tissue surgery, the repair and support of those robotic systems, and its monopoly power in instruments for use with such robots to foreclose aftermarket repair of those instruments by any competitors."[8] In addition, SIS claims that Intuitive violated the Lanham Act by "assert[ing] false or misleading descriptions of facts or representations in its correspondence with its and SIS's customers…."[9]

9. Mr. Bero represents that he was asked to "calculate lost profit damages in two primary alternative scenarios" and "address disgorgement of Intuitive's profits damages under the

---

[5] Expert Report of Loren K. Smith, Ph.D., *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.*, Case No. 3:21-cv-03496-VC, December 2, 2022 ("Smith Counterclaims Damages Report"), ¶ 7.

[6] Expert Antitrust Merits Rebuttal Report of Loren K. Smith, Ph.D., *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.*, Case No. 3:21-cv-03496-VC, January 18, 2023 ("Smith Antitrust Merits Rebuttal Report"); Expert Report of Dr. Russell L. Lamb, *Surgical Instrument Service Company, Inc. vs. Intuitive Surgical, Inc.*, Case No. 5:21-cv-03496, December 2, 2022 ("Lamb Report").

[7] Expert Report of Richard F. Bero, CPA, CVA, *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.*, Case No. 3:21-cv-03496-VC, December 2, 2022 ("Bero Report").

[8] Complaint, *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.*, Case No. 5:21-cv-03496-SK, May 10, 2021 ("Complaint"), ¶ 110.

[9] Complaint, ¶ 123.

Lanham Act (Count 5)."[10] The two primary scenarios in his lost profit damages analysis are: (1) "Scenario 1 - Illegal Encryption"[11] in which "X/Xi encryption is illegal" and third-party companies would have been able to reset X/Xi instruments beginning on January 1, 2020;[12] and (2) "Scenario 2 - Unenforceable Contracts"[13] in which "enforcing the hospital contracts is illegal" and because "cracking the X/Xi encryption would have taken some period of time," third-party companies would have been able to rest X/Xi instruments beginning on January 1, 2021 or January 1, 2022.[14] In addition, Mr. Bero calculates damages under two different assumptions with regards to SIS's business model: (1) "SIS would have performed the repair services in-house (the 'In-house model')"; and (2) "SIS would have acted as a repair service distributor (the 'Distributor model')."[15] These two scenarios and two assumptions regarding SIS's business model in the "but-for" world lead to a range of damages estimates. Specifically, Mr. Bero concludes that the present value of SIS's lost profits (using a January 1, 2024 date for a resolution to this litigation) ranges from $40.91 million to $102.62 million under Scenario 1 and $22.42 million to $80.61 million under Scenario 2.[16] Mr. Bero concludes that the present value of damages under the Lanham Act based on disgorgement of Intuitive's profits associated

---

[10] Bero Report, p. 1.

[11] Bero Report, p. 6.

[12] Bero Report, pp. 46-47. In Scenario 1 of Mr. Bero's lost profits analysis, damages associated with alleged lost sales of reset X/Xi EndoWrist instruments span the period January 1, 2020 through the end of 2025. *See* Bero Report, p. 47.

[13] Bero Report, p. 6.

[14] Bero Report, pp. 57-58. Scenario 2 of Mr. Bero's lost profits analysis includes estimates for a "2 Year X/Xi delay" (where damages associated with alleged lost sales of reset X/Xi EndoWrist instruments span January 1, 2022 through the end of 2025) and a "1 Year X/Xi delay" (where damages associated with alleged lost sales of reset X/Xi EndoWrist instruments span January 1, 2021 through the end of 2025). *See* Bero Report, Schedules 4.2 and 4.5.

[15] Bero Report, p. 6. I understand that Intuitive alleges that SIS misrepresents the nature of its service through which it bypasses the usage limits on EndoWrist instruments by characterizing that service as a "repair." I refer to this service as a "reset" for convenience only and express no opinion as to whether it accurately describes the work that SIS performs.

[16] Bero Report, p. 6.

with SIS's purported lost sales of reset EndoWrist instruments ranges from $268.22 million to $385.37 million (using a January 1, 2024 date).[17]

10. For the reasons set forth in my Antitrust Merits Rebuttal Report, Intuitive's conduct has been on-balance procompetitive, and thus SIS's claims lack merit, and no damages are warranted. Notwithstanding this opinion, I evaluate Mr. Bero's damages analysis under the assumption that Plaintiff will prevail on its claims. For the reasons outlined below, I find that Mr. Bero's estimated damages are unreliable and inflated. My analysis focuses on the reliability of many assumptions on which his damages calculations depend. I do not attempt to respond to every claim in the Complaint or in the Bero Report. My lack of response to any particular claim does not indicate agreement.

11. A list of the materials that I considered in forming my opinions in this Report is enclosed as Exhibit B.

12. The work presented in this Report was conducted by me and staff at The Brattle Group working under my direction. The Brattle Group bills my time on this matter at $875 per hour. Neither my compensation nor the compensation of The Brattle Group depends in any way on the outcome of this case.

13. My work in this matter is ongoing. I reserve the right to supplement my analyses and conclusions should any additional information be provided to me after the submission of this report.

C. SUMMARY OF OPINIONS

14. Based on my analysis of the Bero Report, I find that Mr. Bero's lost profits damages analysis is based on several unsupported assumptions that cause him to significantly overstate any damage to SIS. More specifically, *Mr. Bero's damages analysis fails to consider a proper "but-for" world and suffers from other key methodological flaws*. His damages figures depend on a series of unreliable assumptions, including:

[17] Bero Report, p. 6.

a. Mr. Bero's damages calculations rely on the assumption that Intuitive will not meaningfully alter its go-to-market strategy in a "but-for" world where it no longer can sell the components of its da Vinci Surgical System as an integrated product. It is clear that the components of the da Vinci Surgical System are strong complements—e.g., the da Vinci platform and EndoWrist instruments are not useful for their designed purpose unless used together. If forced to unbundle the components of the da Vinci Surgical System, Intuitive likely would alter its go-to-market strategy. Given Intuitive's history of efforts to maintain da Vinci Surgical System integration, it is plausible that Intuitive's strategy in the relevant "but-for" world would seek to maximize system integration, which would lessen if not eliminate any damage to SIS.

b. Based on testimony from third parties that sold reset EndoWrist instruments, Mr. Bero assumes that these third parties would have been able to reset X/Xi EndoWrists in the relevant "but-for" world. Despite experience resetting S/Si instruments and despite significant incentive and effort, no third-party company has yet been able to reset X/Xi EndoWrist instruments. Hence, it is uncertain if or when third-party companies will be able to reset X/Xi EndoWrist instruments, and thus Mr. Bero's damages calculations relating to these instruments are unreliable. This is important because more than 95 percent of Mr. Bero's calculated damages relate to reset X/Xi EndoWrist instruments.

c. Even ignoring the practical and conceptual issues described above, and accepting all of his assumptions, two identified computational errors in Mr. Bero's calculations cause his lost profits damages estimates to be overstated by as much as approximately 11 percent.

d. Finally, Mr. Bero's damages calculations rely on ambitious assumptions regarding "market penetration" by SIS. First, Mr. Bero's "market penetration" rates are high even relative to his chosen "benchmarks." Second, Mr. Bero ignores ample evidence that his assumed SIS penetration rates are overstated in favor of a biased selection of documents. As examples:

   i. Mr. Bero calculates his instrument expiration rate based on Intuitive's "top 5" most popular instruments and applies it to all of the instruments for which he claims damages. Mr. Bero could have calculated a similar expiration rate for a broader set of instruments he includes in his calculation of damages, and it would have been lower.

ii. Mr. Bero's damages calculations do not appear to consider testimony that indicates hospitals[18] and surgeons may be reluctant to purchase resets that have not been cleared by the U.S. Food and Drug Administration ("FDA"). I understand that a single reset recently has been cleared for a single S/Si EndoWrist instrument. Hence, any reluctance to purchase reset EndoWrists that have not been cleared by the FDA may significantly reduce any market penetration and damages.

iii. Mr. Bero uses a target collection rate of 70 percent from Intuitive's exploratory refurbishment initiative. He fails to adjust for the fact that the realized collection rate was only 40 percent, which was the rate Intuitive adjusted to in the assessment of the program. Of course, using a collection rate of 40 percent instead of 70 percent would reduce Mr. Bero's damages by more than 40 percent.

e. Making even a few of these corrections to Mr. Bero's calculations reduces damages by as much as 98.9 percent.

15. I find that Mr. Bero's disgorgement damages are overstated for at least three reasons. First, I understand that the plaintiffs' Lanham Act claim is based on a single letter from Intuitive to a hospital regarding the implications of the hospital's use of reset EndoWrist instruments. Nonetheless, Mr. Bero assumes Intuitive's disgorged profits include all of the instruments SIS would have sold in the recent past and through 2025 (i.e., the same instrument sales Mr. Bero uses in his lost profits damages calculations). Second, Mr. Bero applies the same flawed assumptions in his calculation of SIS's purported lost sales of reset EndoWrist instruments. And third, Mr. Bero fails to account for Intuitive's incremental costs associated with the alleged lost sales of reset EndoWrist instruments, which further would reduce his disgorgement damages. Making a few corrections to Mr. Bero's calculations reduces his disgorgement damages by as much as 98.9 percent.

[18] In this Report, I use the term "hospital" as a shorthand to refer to hospitals, ambulatory surgery centers, and other healthcare facilities that may own or lease a da Vinci Surgical System.

II. MR. BERO'S LOST PROFITS ANALYSIS SUFFERS FROM CONCEPTUAL AND METHODOLOGICAL FLAWS THAT INFLATE SIS'S PURPORTED DAMAGES

16. Mr. Bero purports to calculate "lost profit damages" estimates across a range of scenarios with varying assumptions about the timing of SIS's sales of reset X/Xi EndoWrist instruments and SIS's cost structure.[19] Mr. Bero's analysis is based on his projection of what "would have otherwise happened in the event the Alleged Wrongdoings had not happened."[20] Mr. Bero's "but-for" world relies on a series of assumptions leading to his estimate of SIS's "Would-Have-Been EndoWrist repair units," and those "but-for" units as a share of total S/Si and X/Xi EndoWrist instruments (that are eligible to be reset) sold during the year is his "market penetration" rate.[21] The difference in his "actual" and "but-for" number of reset EndoWrists sold yields SIS's purported lost units of reset EndoWrists.[22] SIS's lost profits are then calculated by applying SIS's average selling price per unit and incremental costs to its lost units of reset EndoWrist instruments.[23]

17. A comparison of Mr. Bero's assumed SIS sales of reset EndoWrist instruments and SIS's actual sales indicates that his results are ambitious. Mr. Bero assumes that in the relevant "but-

---

[19] Bero Report, pp. 4-6. *See also* ¶ 9 above.

[20] Bero Report, p. 42.

[21] Bero Report, pp. 47-53 and Table 5.

[22] Mr. Bero claims that, even if SIS prevails in the litigation and is able to sell reset EndoWrist instruments after the conclusion of the trial, SIS would collect on damages through the end of 2025, by which time SIS "would get to a position it would have otherwise been." Bero Report, p. 47. Thus, Mr. Bero's damages analysis also includes a forecast of the "actual" world through the end of 2025. Bero Report, p. 53. His forecast is based on the same assumptions he uses to construct his "but-for" world but with a start date of January 2024 for reset S/Si and X/Xi EndoWrist sales. *See* Bero Report, p. 53 and Schedules 2.2, 4.2 and 4.5. Unless otherwise indicated, my critiques of Mr. Bero's assumptions apply to both his "but-for" world and forecast of the "actual" world. In my sensitivities analysis, I adjust both Mr. Bero's "but-for" and "actual" worlds.

[23] Bero Report, Schedules 2.1, 4.1, and 4.4.

for" world SIS would achieve between 25,000 and 40,000 resets per year from January 1, 2020 through 2025.[24] This is a large increase from the 41 instrument resets SIS managed in 2019.[25]

18. As I discuss in more detail in this section, there are numerous assumptions in Mr. Bero's analysis that are unreliable and inflate his lost profits damages estimates. In particular, as described in Sections A and B, Mr. Bero's assumptions about Intuitive's behavioral response (or lack thereof) to third-party sales of reset EndoWrist instruments and the timing of third-party sales of reset X/Xi EndoWrist instruments are inconsistent with the evidence in the case and economic principles. In Section C, I show the impact on Mr. Bero's damages estimates after correcting for two computational errors in his analysis. Section D discusses specific assumptions underlying SIS's "market penetration" rate and explains why these assumptions cause his damages estimates to be inflated. Section E concludes with a summary of impact on damages after correcting Mr. Bero's errors and assumptions. Although I do not adjust for every error in Mr. Bero's analysis, I find that—even for the ones that can be quantified based on the data available to me—Mr. Bero's damages estimates would fall by as much as 98.9 percent.

---

[24] Bero Report, p. 47, Table 5. I calculate the average number of reset EndoWrist instruments per year in Mr. Bero's analysis by dividing Table 5's "Would-have-been Lost EndoWrist repair units" row by six years (January 1, 2020 to December 31, 2025). Specifically, 236,975 "Would-have-been Lost EndoWrist repair units" in Scenario 1 divided by 6 is 39,496, and 153,191 "Would-have-been Lost EndoWrist repair units" in Scenario 2 (lower end of the range) divided by 6 is 25,532.

[25] Smith Counterclaims Damages Report, Table 1. Under the assumption that the Interceptor chip from Rebotix Repairs LLC was the only process to circumvent the use counter for S/Si EndoWrist instruments in the U.S. in 2019, the total number of reset EndoWrist instruments sold in 2019 was likely around 455. *See* Smith Counterclaims Damages Report in *Rebotix*, Table 1 (sum of "'Repair' Services Total" and "Interceptor assembly programmed with 10 Uses," which were sold to Restore Robotics LLC and Restore Robotics Repairs LLC per REBOTIX175326).

A. MR. BERO DOES NOT PROPERLY ANALYZE THE "BUT-FOR" MARKET STRUCTURE AND INTUITIVE'S LIKELY RESPONSE TO THIRD-PARTY SALES OF RESET ENDOWRIST INSTRUMENTS

19. A fundamental problem with Mr. Bero's analysis is that he fails to consider Intuitive's likely response to SIS's (and any third party's) activity in a "but-for" world where Intuitive is unable to sell the da Vinci System as an integrated product. In particular, Mr. Bero does not appear to consider the economic logic that if a firm is not free to maintain quality control and foster investment through contractual restrictions, it likely will try to achieve similar goals in less efficient ways.[26] For example, if Intuitive were not free to protect the safety and welfare of patients, and by extension Intuitive's reputation and financial viability, through contractual provisions, a rational response would be to change its pricing strategy to achieve as much system integration as possible (e.g., by increasing its prices for da Vinci platforms and lowering its prices for EndoWrist instruments). If Intuitive were to change its strategy to achieve a higher level of system integration in the relevant "but-for" world, it is likely that fewer customers would choose SIS's reset EndoWrist instruments over Intuitive's instruments than Mr. Bero assumes.

20. Setting aside Intuitive's potential change in pricing strategy (as opposed to Mr. Bero's implicit assumption Intuitive's behavior would remain unchanged), Mr. Bero's analysis does not reflect potential costs stemming from the fact that SIS does not own the "intellectual property"

---

[26] Jean Tirole, "The Analysis of Tying Cases: A Primer," *Competition Policy International* 1, No. 5 (2005): 16 ("A well-known rationale for tying is that a tie enables the metering of demand and prices to depend on consumer usage… suppose that some consumers use M on a stand-alone basis while others use M in combination with C or C'. Under unbundling, the producer of M is forced to charge a single price for M, even though the two groups' willingness to pay may be quite distinct. For example, if consumers without demand for the complementary product have a low willingness to pay for M, the producer of M may end up charging a high price for M and prevent them from consuming. By contrast, a tie enables the producer of M to charge a low price for the basic good and a high price for the combination, which avoids excluding the first group and raises economic efficiency.") ("Tirole").
In a draft business plan dated October 29, 1995, Intuitive contemplated that "systems will be placed for little or no charge at sites that sign an annual minimum disposables and [Reposable Transmission Unit] purchase contract" (Intuitive-00595673 at -682-683).

associated with resetting EndoWrist instruments, particularly the chip that would be inserted into the instrument.[27] In his "in-house repair model," Mr. Bero assumes that SIS would purchase the chip from Restore Robotics LLC ("Restore") and/or Rebotix Repairs LLC ("Rebotix").[28] In his "distributor model," Mr. Bero assumes that SIS would pay Restore and/or Rebotix for "repair services" that encompass the chip and labor entailed in resetting the EndoWrist instrument.[29]

21. The fact that SIS does not own any "intellectual property" could impact Mr. Bero's analysis in multiple ways.[30] First, SIS faces risk that Rebotix or Restore[31] could increase the amount they charge SIS for the chip/reset services, which would raise SIS's costs and reduce profits. Second, Rebotix and/or Restore may license their "intellectual property" with additional

---

[27] Posdal 30(b)(1) (11/1/2022) Dep. Tr. 25:5-19 ("Q. And so, the -- the relationship with Rebotix was that SIS would source customers for the chip reset, and then Rebotix would perform the actual service and send the -- the devices back to SIS; is that basically how it worked? A. Initially, yes. It was our intent and -- and understanding on both parties that we would like to bring that entire service in-house as we do with almost every one of our other services. But in the ramp-up time, especially with how quickly this process moved, we would have had instruments for that service prior to our being up for it. And that's -- that's how this program got started."), and 28:17-29:15 ("Q. What steps would SIS needed to have taken in order to be able to provide that service in-house? We had discussions with Rebotix at the time. We had set up for a training period, where --whereby Rebotix personnel would come to our lab, help train our people…Q. Did the -- that training period that you mentioned, did that ever happened? A. It did not."). *See also* Gibson (6/22/2021) Dep. Ex. 13, (REBOTIX061127-138 at 128-129).

[28] Bero Report, p. 55.

[29] Bero Report, p. 56. *See also* Bero Report, pp. 54-55 (for Mr. Bero's description of "repair costs" in the in-house repair model).

[30] Keith Johnson, SIS's Executive Vice President of Sales and Clinical Programs, confirmed that SIS was incapable of running an EndoWrist repair on its own as of October 2022. Johnson 30(b)(6) (10/27/2022) Dep. Tr. 21:16-19 ("Q. …Does SIS have the capability to run an EndoWrist repair program on its own? …[A.] Not currently.").

Mr. Bero does not appear to contemplate a world in which SIS develops its own process to reset the use counter, which would entail additional expenses and increase competition among third parties selling reset EndoWrist instruments that would further reduce profits.

[31] In his "Distributor model," Mr. Bero assumes that "SIS acted essentially as a distributor for the EndoWrist repair services" and that "Rebotix and/or Restore would have provided services." Bero Report, p. 56.

distributors; this could limit SIS's potential customers or introduce new competitors to SIS. Third, Rebotix and/or Restore could cut off SIS entirely from reset "services"; fluctuations in supply of the chips would also potentially harm SIS's business in selling reset EndoWrist instruments.[32] Although contracts or agreements may help to address these issues, I am not aware of an executed agreement between SIS and Rebotix or between SIS and Restore concerning reset "services."

B. MR. BERO'S DAMAGES ASSOCIATED WITH RESETS OF X/XI ENDOWRIST INSTRUMENTS ARE SPECULATIVE AND CONTRARY TO THE EVIDENCE IN THE CASE

22. In his damages analysis, Mr. Bero assumes that third-party companies would have been able to sell reset X/Xi EndoWrist instruments as early as January 1, 2020 (in Scenario 1) or January 1, 2021 (in Scenario 2 with a 1-year X/Xi delay).[33] Mr. Bero cites to testimony from Rebotix and Restore claiming that, in the absence of Intuitive's alleged misconduct, third-party companies would be able to reset the use counters for X/Xi EndoWrist instruments.[34]

23. However, Mr. Bero's inclusion of sales of reset X/Xi EndoWrist instruments is speculative because, as of the date of this Report, none of the third-party companies has successfully developed a process to reset the use counter of X/Xi EndoWrist instruments. Greg Posdal, the President and CEO of SIS, testified that neither Rebotix, Restore, nor SIS has reset the use counter of an X/Xi EndoWrist instrument as of November 1, 2022.[35] Mr. Posdal's testimony is

---

[32] Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4th Edition, (Pearson: 2015), 29 ("A firm that relies on another to supply a factor that is essential to its production process may be exploited because it cannot operate if its supply is stopped. This problem is likely to be important if there are few alternative suppliers.").

[33] Bero Report, pp. 47 and 57. In Scenario 2, Mr. Bero also calculates damages under the assumption that SIS would have begun selling reset X/Xi EndoWrist instruments by January 1, 2022. Bero Report, p. 57.

[34] Bero Report, pp. 30-32.

[35] Posdal 30(b)(1) (11/1/2022) Dep. Tr. 38:13-22 ("Q. Has SIS gotten the Xi up and running yet? A. SIS has not attempted to get the S- -- the Xi up and running yet. Q. Has the Rebotix gotten the Xi up and running yet? A. To my knowledge, no. Q. Has Restore gotten the Xi

confirmed by the testimony of Mr. May and Mr. Hamilton.[36] And, evidence indicates that third-party companies have spent multiple years and have not developed and/or finalized a process that resets the use counter of Intuitive's X/Xi EndoWrist instruments as they had done with S/Si instruments.[37]

---

running up and running yet? A. In terms of its ability to read, yes. In terms of replacing, I'm not certain.").

[36] May (11/3/2022) Dep Tr. 50:8-16 ("Q. Has your company extracted security keys from an Xi? A. We -- partially, we have been able to read all the data and we've been able to display the data as we've incorporated it into our Xi reading technology in our handheld Xi reading – readers that we've developed. We have not completed that process to where we can fully reverse engineer it, but we're – we're – we're down the road.").; Hamilton (11/4/2022) Dep. Tr. 38:10-15 ("Q. …[S]itting here today, does Rebotix have a process that it is following to try to reset Xi endoWrist instruments? …[A.] I would say the way to answer that most clearly is that there is a process under development which has not been released yet.").

[37] For example, Restore began developing a process to reset the use counter for X/Xi EndoWrist instruments in January 2020 and forecasts that they will be "in the business of repairing EndoWrists" (Parker (10/25/2022) Dep. Tr. 156:14-18, below) for X/Xi instruments around the end of 2023 or first quarter of 2024. *See* May (11/3/2022) Dep. Tr. 118:1-5 ("Q. …[I]s it fair to say that starting in January 2020, Restore undertook efforts to circumvent the use counter for the Xi instrument? A. Discussions beforehand, but actual efforts, yes, around that time."). *See also* Parker (10/25/2022) Dep. Tr. 156:14-18 ("Q. When do you think that Restore will be back in the business of repairing EndoWrists? A. First quarter of 2023 for the Si and probably first quarter of 2024 for -- for the Xi, could be the end of 2023.").

I understand that Rebotix has a "process under development which has not been released yet." *See* Hamilton (11/4/2022) Dep. Tr. 38:9-39:12 ("Q. …[S]itting here today, does Rebotix have a process that it is following to try to reset Xi endoWrist instruments? …[A.] I would say the way to answer that most clearly is that there is a process under development which has not been released yet. …Q. Has -- sitting here today, has Rebotix figured out how to circumvent the usage counter on Xi endoWrist instruments? …[A.] Substantially, yes. …Q. …[W]hat is missing from the process to fully develop and implement the ability to reset the usage of Xi endoWrist instruments? …[A.] Final procedures, testing, validation, same things we had to go through for the Si. All the testing that has to be done, and is now in progress, but it takes time.").

Assuming 510(k) clearance would be required to reset X/Xi EndoWrist instruments, I understand that the FDA has not granted 510(k) clearance to any company to reset any X/Xi instruments.

24. As shown in Table 1 below, more than 95 percent of SIS's purported lost revenues across Mr. Bero's scenarios are attributable to sales of reset X/Xi EndoWrist instruments.

TABLE 1
SHARE OF SIS'S LOST REVENUES ATTRIBUTABLE TO SALES OF X/XI ENDOWRIST INSTRUMENTS WITH RESET USE COUNTERS

	Scenario 1	**Scenario 2**	
	No X/Xi Reset Delay	1-Year X/Xi Reset Delay	2-Year X/Xi Reset Delay
	[1]	[2]	[3]
In-House Model	97.4%	95.2%	96.6%
Distributor Model	97.5%	95.4%	96.8%

Source: "Bero Sensitivities" workpaper.

25. Mr. Bero's calculations for Scenario 1 assume that Intuitive's X/Xi encryption is illegal and sales of reset X/Xi EndoWrist instruments would have started in January 2020.[38] Scenario 1 appears to be trying to thread a needle where the S/Si use counter and a similar level of "encryption" on X/Xi is legitimate (actually necessary), but a different X/Xi encryption is not legitimate.[39] Threading that needle is crucial to Mr. Bero's damages calculations because, as I

[38] Bero Report, p. 46.

[39] It is unclear whether Mr. Bero assumes only that the security measures for the X/Xi are illegal or if he assumes any deviation from the S/Si instrument-counter design is illegal. If the former, there is an additional reason Mr. Bero's assumptions about third-party's ability to reset X/Xi instruments are speculative and unreliable. Mr. Bero relies on the testimony of Mr. May, who claims that Restore would have been able to reset the use counters for X/Xi EndoWrist instruments "[i]f the Xi device had used the same security measures as the Si device." *See* May (11/3/2022) Dep. Tr. 113:19-23. In his testimony, Mr. May further explains that there are more differences between the Xi and Si devices than the security measures; in particular, the way in which the chip in the EndoWrist instrument communicates with the platform differs. *See* May (11/3/2022) Dep. Tr. 114:12-22 ("Q. Other than the chip security, is it your understanding that the Xi chip and the Si chip perform exactly the same function? ...[A.] The communication is different between the robot. But the purpose of the counter is to basically tell the robot this is -- this is what instrument I am. And this is how many uses I have left. So the information is the same, but the way it communicates to the robot is different."). Thus, even if Intuitive's "security measures" for its X/Xi EndoWrist instruments were deemed unlawful and thus not part of the but-for world, it is not clear whether Restore would have been able to reset the X/Xi use counter, given the

discussed in the Smith Antitrust Merits Rebuttal Report, third-party companies—including Restore, Rebotix, and SIS—benefit from "free-riding" on Intuitive's technology and reputation,[40] and these companies earn gross profits on the order of 28 percent (where SIS serves as a distributor only and does not own the "intellectual property" related to resetting S/Si EndoWrist instruments) to 88 percent (where Rebotix owns the "intellectual property" and sells reset EndoWrists).[41] Without at least the type of "encryption" in the S/Si EndoWrists to workaround, economic principles indicate that prices in supposed "markets" for third-party reset EndoWrists would significantly decrease and/or Intuitive would change its go-to-market strategy to incentivize hospitals to seek EndoWrist replacements from Intuitive—both of which would translate to a decrease in Mr. Bero's claimed damages.[42] Mr. Bero does not provide a basis for an assumption that Intuitive cannot legitimately use different security protections for its X/Xi EndoWrists than it does for its S/Si EndoWrists, which are designed for two different and non-interchangeable da Vinci Systems.[43]

---

differences between the S/Si and X/Xi devices, such that the instruments would be able to communicate with and function as part of the da Vinci System.

40 A "free rider" is a "[c]onsumer or producer who does not pay for a nonexclusive good in the expectation that others will." A "nonexclusive good" is a "[g]ood that people cannot be excluded from consuming, so that it is difficult or impossible to charge for its use." *See* Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics, Eighth Edition* (New Jersey: Pearson Education, Inc., 2013), pp. 693 and 690.

In the context of the case, third parties may take advantage of (or free ride on) Intuitive's investments without sharing in the costs.

41 *See* Bero Report, Schedule 3.1 (Based on the Total column for da Vinci S/Si, ($1,441 - $1,039) / $1,441 = 0.279). According to Rebotix's damages expert, 88 percent is Rebotix's "but-for" gross margin. Expert Report of Robert Mills, *Rebotix Repair LLC vs. Intuitive Surgical, Inc.*, Case No. 8:20-cv-02274, July 26, 2021 (Exhibits 18, 19, 20, 21, 22, 23, 24, and 25; subtract total variable avoided costs divided by total revenue from one).

42 *See also* Section A above.

43 McGrogan (in *Rebotix*) Dep. Tr. 78:19-80:15 ("Q. Now, the actual design of the EndoWrists, the S and Si EndoWrists, those aren't compatible with the da Vinci Xi; is that right? A. That's correct. Q. Why not? A. They're different platforms… the platforms had different surgical goals. The Xi had expanded goals for surgery that the Si platform didn't have. And that drove, amongst other things, a lengthening of the instrument as a primary requirement, which made -- and lengthening means working deeper in the body. So we wanted to enter at one port location and work much deeper or much farther into the body, and that drove for a

C. CORRECTING THE IDENTIFIED COMPUTATIONAL ERRORS IN MR. BERO'S LOST PROFITS ANALYSIS ALONE LOWERS DAMAGES BY AS MUCH AS 11.2 PERCENT

26. In addition to the conceptual issues in Mr. Bero's analysis as discussed above, Mr. Bero's calculations contain two computational errors that overstate his damages estimates.

27. First, Mr. Bero's calculations for the "distributor model" include an estimate of the per-instrument payment to Restore/Rebotix on an annual basis.[44] As reflected in his backup materials, Mr. Bero incorrectly assigns the payments in 2018 to 2020 as payments in 2020 to 2022.[45] If Mr. Bero had correctly linked these per-instrument payments, his damages would be reduced by 7.4 to 7.8 percent in the "distributor model."[46]

28. Second, Mr. Bero's estimate of the "repair yield"—the share of instruments sent by hospitals to SIS for "repair" that are actually "repairable"—is incorrectly calculated based on Mr. Bero's cited source. Mr. Bero reports a repair yield of 72 percent based on a 2021 Restore investor presentation discussing results of its Si and Xi recycle program.[47] However, the numbers reported in Mr. Bero's citation (215 out of 310) would indicate a repair yield of 69 percent.[48]

29. Correcting both of these computational errors would lower damages by as much as 11.2 percent, as shown in Table 2 below.

---

longer instrument. And that, among other requirements, made us evolve the platform, the robot, and the instrument to go along with it. Q. In other words, when you say the length of the instrument, the actual length of how -- how far it can reach into the body was different between the S/Si and X/Xi platforms; right? A. Yes, not only that and a whole host of differences. The platforms are substantially different… Q. Did Intuitive conduct any testing to determine whether the S/Si instruments would be compatible with the X/Xi? A. We didn't need to. They're not compatible.").

44 *See* Bero Report, Schedule 11.0.

45 *See*, e.g., cell D14 in tab "3.1" compared to cell E27 in tab "11.0" in "Bero Natives.xlsx."

46 *See* Table 2 below.

47 Bero Report, p. 52 and fn. 386 ("Per Restore-00094918-00094956 at 922 (Parker (10/25/2022) Dep. Ex. 121), 215 out of 310 instruments collected in a 2-week sample that had lives on them passed Restore's inspection (i.e., were repairable).").

48 0.694 = 215 / 310.

TABLE 2
SIS'S LOST PROFITS DAMAGES AFTER CORRECTING FOR COMPUTATIONAL ERRORS IN THE BERO REPORT

		Scenario 1		Scenario 2			
		No X/Xi Reset Delay		1-Year X/Xi Reset Delay		2-Year X/Xi Reset Delay	
		Value	% Change	Value	% Change	Value	% Change
(USD millions)		[1]	[2]	[3]	[4]	[5]	[6]
Distributor Model							
Original	[A]	40.91	n.a.	32.21	n.a.	22.42	n.a.
Correct Cost Assignment Error	[B]	37.88	(7.4%)	29.69	(7.8%)	20.66	(7.8%)
Correct "Repair Yield" Math Error	[C]	39.41	(3.7%)	31.03	(3.7%)	21.60	(3.7%)
Correct Both Computational Errors	[D]	36.49	(10.8%)	28.60	(11.2%)	19.91	(11.2%)
In-House Model							
Original	[E]	102.62	n.a.	80.61	n.a.	56.16	n.a.
Correct "Repair Yield" Math Error	[F]	98.86	(3.7%)	77.65	(3.7%)	54.10	(3.7%)

Source: "Bero Sensitivities" workpaper.
Notes:
[2]: Percent change of correction relative to original values in [A][1] and [E][1].
[4]: Percent change of correction relative to original value in [A][3] and [E][3].
[6]: Percent change of correction relative to original value in [A][5] and [E][5].

D. KEY ASSUMPTIONS THAT UNDERPIN MR. BERO'S CALCULATIONS ARE UNRELIABLE AND INCREASE HIS DAMAGES ESTIMATES

30. To estimate lost profits, Mr. Bero identifies the number of "Would-Have-Been EndoWrist repair units," which is the share of EndoWrist instrument sales that purportedly would have been reset EndoWrist instruments sold by SIS in the "but-for" world. In Table 5 of his report, Mr. Bero refers to this share as the "market penetration."[49] He estimates SIS's number of "but-for" reset EndoWrist instruments sold by applying a set of assumptions to the total number of EndoWrist instrument sales in Intuitive's instruments and accessories transaction data:

a. Mr. Bero's analysis focuses on EndoWrist instruments that are eligible for the reset "service." Specifically, Mr. Bero focuses on U.S. sales of EndoWrist instruments on a "SIS price sheet that was part of its September 2019 Vizient Amended Agreement," which only included S/Si EndoWrist instruments.[50] Mr. Bero includes associated X/Xi instruments

[49] Bero Report, p. 47, Table 5 (*see* row "Market penetration (% of total units)").
[50] Bero Report, p. 48.

"based on similar S/Si instrument numbers and descriptions, along with Intuitive product catalogs."[51]

b. Mr. Bero calculates the percentage of those eligible instruments that are "expired"[52] under the assumption that the ratio of expired instruments to new instruments sold in a given year is 60 percent.[53]

c. Mr. Bero assumes that SIS's "market share within the market EndoWrists are sold" is 55 percent.[54] This assumption is based on Mr. Bero's claims that:

   i. SIS "had an agreement in place with Vizient for EndoWrist repairs," and "Vizient would have promoted SIS repair services to all of its acute care providers with EndoWrists";[55] and

   ii. Vizient "provided services for more than 50% of U.S. acute care providers" in 2019 and "currently provides services for more than 60% of the U.S. acute care providers."[56] Mr. Bero takes 55 percent as the mid-point between 50 percent and 60 percent.[57]

d. Among SIS's and Vizient's customers, Mr. Bero assumes that, in three years, 70 percent of acute-care hospitals in Vizient's network would "convert" to purchasing SIS's reset EndoWrist instruments instead of Intuitive's new EndoWrist instruments (the "conversion rate").[58]

---

51 Bero Report, p. 48.

52 Mr. Bero does not define "expired instrument" in his report. My understanding is that an "expired instrument" is an instrument whose use counter reached zero. Bair (in *Rebotix*) Dep. Tr. 49:18-25 ("Q. …An expired instrument would be an EndoWrist whose use counter has reached zero; right? A. That is correct. Q. An expired instrument might also be an instrument that failed before reaching zero on the use counter; right? A. I do not believe that classifies as an expired instrument.").

53 Bero Report, p. 48.

54 Bero Report, p. 49.

55 Bero Report, p. 49.

56 Bero Report, p. 50.

57 Bero Report, p. 50.

58 Bero Report, p. 50. Specifically, Mr. Bero assumes a three-year ramp up to full "conversion," with 15 percent in Year 1, 50 percent in Year 2, and 70 percent by Year 3. Mr. Bero relies on

e. Mr. Bero assumes that 70 percent of EndoWrist instruments that are eligible to be reset would be collected from the acute-care hospitals that have "converted" to using SIS's reset "service" (the "collection rate").[59]

f. Mr. Bero assumes that SIS will be able to reset the use counters for 72 percent of the EndoWrist instruments collected (the "repair yield").[60]

g. The culmination of the assumptions listed above leads to the number of "would-have-been EndoWrist repair units" and SIS's "market penetration" as a share of total EndoWrist units.[61]

31. In this section, I discuss ways in which specific assumptions in Mr. Bero's calculation of SIS's "market penetration" rate tend to inflate his lost profits damages estimates. As described in Section 1 below, his overall estimate of SIS's "market penetration" rate is higher than the "benchmarks" that he selected after making appropriate adjustments, which Mr. Bero failed to do. In Section 2, I highlight flaws in three specific assumptions in Mr. Bero's analysis; these three assumptions are not meant to be an exhaustive list but illustrate why it is no surprise that the "market penetration" rate at which Mr. Bero arrives appears to be high.

1. The implied "market penetration" rate of reset EndoWrist instruments is high relative to Mr. Bero's own benchmarks

32. Mr. Bero's final "market penetration" rate (i.e., SIS's share of total sales of S/Si and X/Xi EndoWrist instruments eligible for reset "services") is 2 to 12 percent.[62] Mr. Bero compares his "market penetration" rates with three "benchmarks," claiming they show that his rates "appear[] reasonable relative to other available data."[63] However, as I discuss in more detail

---

his discussions with Jean Sargent, Keith Johnson, and Greg Posdal and does not cite to any other sources for this assumption.

59 Bero Report, p. 51.

60 Bero Report, pp. 51-52.

61 Bero Report, p. 47 and Table 5.

62 Bero Report, p. 52. SIS's "market penetration" rate increases from 2 percent in 2020 to 12 percent in 2022 and remains at 12 percent through the end of 2025. *See also* Bero Report, Schedule 2.2.

63 Bero Report, p. 52.

below, Mr. Bero fails to note that, in all cases, these "benchmark" estimates report the percentage of *all* reset EndoWrist instruments sold, *not* just sales to acute-care hospitals in Vizient's network (which he claims to have 55 percent of expired EndoWrist instruments)[64] that SIS has access to in his "but-for" world.

33. The first of Mr. Bero's "benchmarks" comes from a 2019 Intuitive presentation that considers "potential Xi refurbishment and estimated penetration of approximately 41 percent or 50 percent."[65] However, Mr. Bero's reliance on Intuitive's internal projections to estimate SIS's "market penetration" rate for the never-initiated instrument refurbishment service is inappropriate for three reasons. He ignores critical components of Intuitive's calculation: Intuitive's status as the original equipment manufacturer, and whether Intuitive's instrument refurbishment procedure was more robust than SIS's procedure to reset the use counter. First, customers likely would prefer to have the original equipment manufacturer, Intuitive, refurbish an EndoWrist instrument (which Intuitive designed, developed, and manufactured) rather than

---

[64] Mr. Bero assumes that SIS would provide reset "services" to acute care providers in Vizient's network, which covers 55 percent of acute care hospitals (and therefore the "market EndoWrists are sold" in Mr. Bero's "but-for" world). *See* Bero Report, pp. 49-50. Mr. Bero further asserts that SIS "anticipated signing up nearly all of the Vizient acute care providers and others," which translates to 70 percent of Vizient's acute care providers by the third year after SIS begins selling reset EndoWrist instruments. *See* Bero Report, p. 50. It is unclear from the Bero Report whether the remaining 30 percent of Vizient's acute care providers would have purchased reset EndoWrists from another third-party company or continued to purchase EndoWrists from Intuitive instead. *See*, e.g., *id.* This assumption implies that SIS would have access to 38.5 to 55.0 percent of the "market" whereas Rebotix, Restore, or other distributors collectively would only have access to 45.0 to 61.5 percent of the "market," where 38.5 percent = 55 percent x 70 percent and 61.5 = 100 percent – 38.5 percent. Given that SIS historically has sold fewer reset EndoWrists than Restore or Rebotix (*see* ¶ 17 and fn. 25 above), Mr. Bero provides no explanation of why the future would look so much different than the past.

In addition, I understand that Iconocare has announced that Encore Medical Device Repair will be their exclusive distributor. PRWeb, "FDA Clearance to Remanufacture Da Vinci Robotic Instruments Could Present Hospitals with Substantial Savings," November 3, 2022, accessed on January 17, 2023, https://www.prweb.com/releases/fda_clearance_to_remanufacture_da_vinci_robotic_instruments_could_present_hospitals_with_substantial_savings/prweb18980465.htm.

[65] Bero Report, p. 52, citing Intuitive-00581814.

a third party.[66] Second, Intuitive's assessment of "[Instrument] Refurbishment Feasibility" contemplated that Intuitive would replace significant portions of the instruments (including the cables, inputs and flush tube) to "survive [additional] lives."[67] SIS, on the other hand, does not replace any instrument components.[68] Hence, Intuitive's internal projections of a "penetration rate" are likely to be higher than that which SIS could achieve because SIS does not have Intuitive's reputation or status as the original equipment manufacturer, nor does SIS replace instrument components.

34. Mr. Bero's second and third "benchmarks" are based on an analyst report from Deutsche Bank dated February 2020 and two models that Stryker created in 2016 when considering whether to acquire Rebotix.[69] Neither of the two "benchmarks" are relevant points of comparison for SIS's "market penetration" rate in the "but-for" world:

a. Regarding the penetration rate in the Stryker models, Mr. Bero offers little discussion as to the extent to which Stryker's forecasts are reliable proxies for SIS, which does not own the "intellectual property" behind the process to reset the use counters for S/Si EndoWrist instruments, or for the period after 2019.[70] Mr. Bero also does not explain why the discussions between Stryker and Rebotix LLC dissolved, and comments in the models suggest that the models would be subject to change with additional information.[71] Stryker

---

66 Intuitive-00103407 at -410. *See also* Jack Curran, "Medical Equipment Repair & Maintenance Services," IBISWorld, Industry Report OD4964, December 2021 at p. 18 ("Due to the highly-regulated nature of medical equipment and the potential loss of life associated with poor repairs, when the capital is available customers tend to choose OEM services.").

67 *See* Intuitive-00367019 at -052. Intuitive's assessment provided that between 32-72 percent of instrument components would have been "scrap[ped]." (*Id.* at -056.)

68 *See* Posdal 30(b)(6) (11/1/2022) Dep. Ex. 136 (SIS095115-139 at -122). *See also* REBOTIX162404 (Rebotix EndoWrist Service Procedure).

69 Bero Report, pp. 52-53. Mr. Bero relies on the Deutsche Bank analyst report for a "4% to 6% 2021 penetration rate" as well as a more aggressive "12% to 18% penetration rate." The two Stryker models suggest penetration rates of 8.5 percent and 9 percent.

70 *See* ¶¶ 20-21 above (on SIS and ownership of the "intellectual property").

71 For example, in one of the models, Stryker assumes that 50 percent to 75 percent of instruments would be eligible for "repairs" but notes that Rebotix "said 75% but they do not yet have Xi and we need to validate the assumption with better data from them. We expect

abandoned the contemplated transaction for a company separate from SIS, and the forecasts were developed over five years ago in 2016. Hence, the assumptions of the Stryker financial models are unreliable as "benchmarks" for Mr. Bero's damages analysis.

b. Regarding the penetration rate in the Deutsche Bank analyst report, the report offers no specific sources for its assumptions: the "4 to 6 percent capture rate" proposed by the report was apparently based on "conversations with surgeon and hospital customers."[72] Citing to the report's claim that "each instrument could be repaired three times," Mr. Bero notes that the penetration rate would be three times higher (12 to 18 percent).[73] In fact, one of Mr. Bero's own citations contradicts the "three repairs per instrument" assumption: in a 2019 Intuitive internal presentation that Mr. Bero references, Intuitive assumes for its own modeling that "Xi instruments can only be refurbished once."[74] Rebotix's own purported testing of the number of uses for EndoWrist instruments has not exceeded 29 uses, which would translate to two resets.[75] Additionally, Iconocare's 510(k) clearance for resetting Si

---

more design changes and a shift of mix over time. NEED TO VALIDATE THIS WITH USAGE DATA!!!" *See* STRREB00001810 ("Top Line Inputs" tab, cell R17). Note that the assumption for "% of Market Units covered by Rebotics [sic] SKUs" in 2015 on the "Make v Buy" tab references the assumption on the "Top Line Inputs" tab and assumes a decrease by 5 percentage points in each subsequent year through 2020.

72 Intuitive-00566055 at -073. When asked in deposition, Imron Zafar—the primary author of the Deutsche Bank analyst report cited by Mr. Bero—could not remember the sources for the assumptions in the report. *See*, e.g., Zafar (11/1/2022) Dep. Tr. 73:12-17 ("A. I don't remember the context of these conversations and, you know, what underlied that 4 to 6 percent range that's listed, I don't remember the specific due diligence that went behind that."). *See also* Zafar (11/1/2022) Dep. Tr. 32:12-33:2 (on Mr. Zafar's role on the report).

73 Bero Report, p. 52. *See also* Zafar (11/1/2022) Dep. Tr. 184:16-19 ("Q. How did you determine that Da Vinci EndoWrists were repairable up to four times? A. I don't recall.").

74 Intuitive-00581814 at -853.

75 Papit (in *Rebotix*) Dep. Tr. 74:15-75:1 ("Q. …When the Interceptor is used on an EndoWrist, how many additional times can that EndoWrist be used over and above the usage limit that was set by Intuitive? A. We have validated testing up to 29 times. We have not done past 20 in our brief presence in the marketplace due to interference that precedes this discussion. Q. So when you say you have not done more than 20, does that mean that you've not reset any 10 usage limit EndoWrists more than twice? A. That's correct.").

EndoWrists—the only clearance for resetting I am aware of—is limited to one reset.[76] As with his second "benchmark", Mr. Bero's third "benchmark" lacks reliable support.

35. Setting aside the validity of the Stryker and Deutsche Bank "benchmarks," I show a comparison of Mr. Bero's estimate of SIS's "market penetration" rate—which is reflected as a red line on the figure—with the "benchmark" "penetration" rates from Stryker and Deutsche Bank in Figure 1 below.[77] In addition, the figure shows the implied "market penetration" rate from Mr. Bero's analysis for the market as a whole. In Mr. Bero's "but-for" world, SIS would capture at most 11.6 percent of the *total* market for resettable EndoWrist instruments although SIS only provides "service" to hospitals in Vizient's network.[78] For Mr. Bero's estimate of SIS's "market penetration" rate to be in line with his "benchmarks" (as Mr. Bero asserts), there would have to be little to no sales of reset EndoWrist instruments outside of SIS's sales to hospitals in Vizient's network. If SIS itself can achieve an overall "market penetration" rate of 11.6 percent when it has access to only 55 percent of resettable EndoWrist instruments, then—under the assumption that the number of reset EndoWrist units per hospital is the same among Vizient and non-Vizient hospitals—the overall "market penetration" rate would be equal to SIS's assumed "penetration rate" within Vizient hospitals—21.2 percent.[79] This value is higher than even the upper end of the estimate in the Deutsche Bank report assuming three resets per

---

[76] "510(k) Premarket Notification Summary, Re: K210478," U.S. Food and Drug Administration, accessed January 18, 2023, https://www.accessdata.fda.gov/cdrh_docs/pdf21/K210478.pdf.
Iconocare received 510(k) clearance for the 8mm Monopolar Curved Scissors Instrument to be used only with the Intuitive Si System ("The design, materials, and intended use of the 8mm Monopolar Curved Scissor Instruments, after an additional ten (10) reuse cycles are equivalent to the predicate device.").

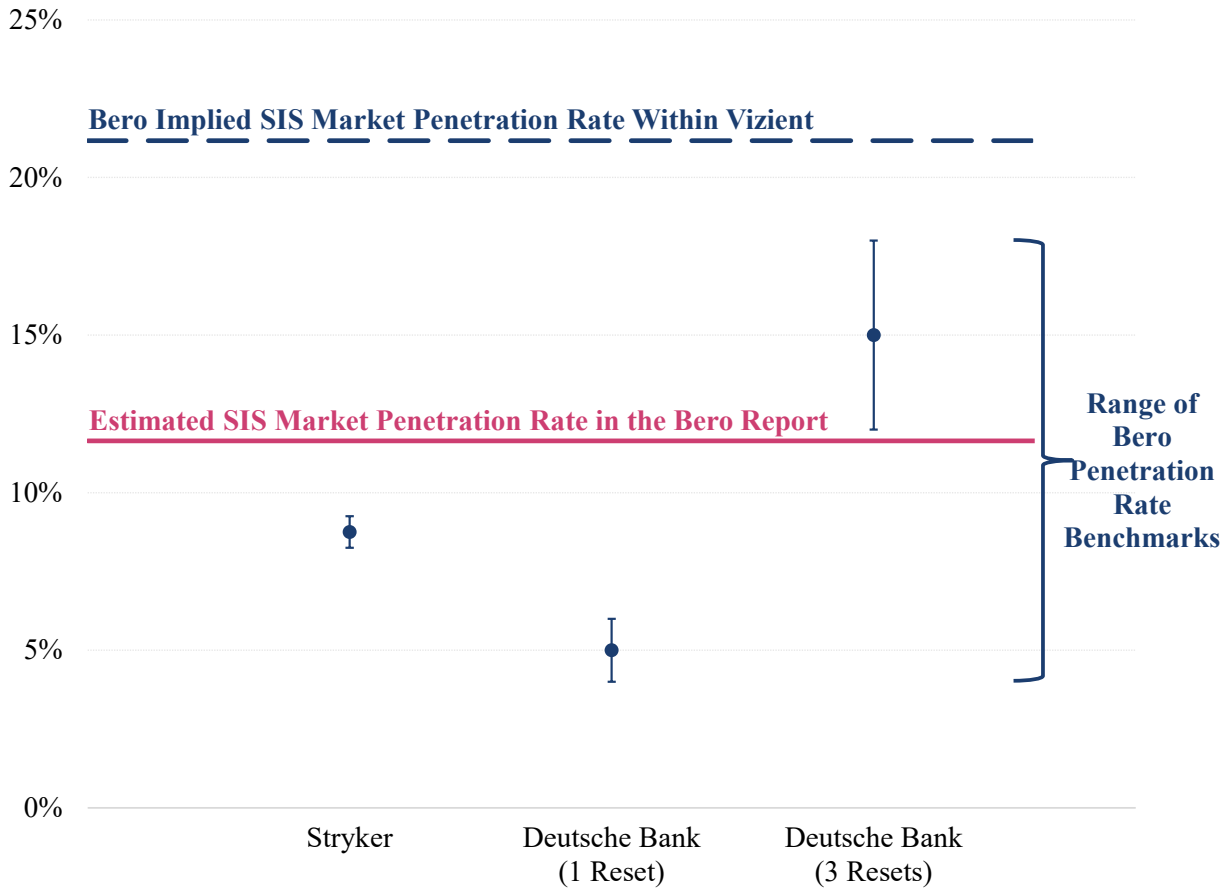
[77] Bero Report, p. 52. As noted above, Mr. Bero describes that the Deutsche Bank analyst report "noted each instrument could be repaired three times, suggesting a higher, 12% to 18% penetration rate"; therefore I include both the higher range assuming three resets as well as the report's primary estimate of 4 percent to 6 percent with one reset.

[78] Bero Report, pp. 49-50 ("Nonetheless, I limit this market share factor to Vizient acute care providers. I apply 55%... as the Vizient market share factor."). Although Mr. Bero reports 12 percent in his report, his workpaper indicates that SIS's "market penetration" rate is 11.64 percent. *See*, e.g., "Bero Natives.xlsx," tab "2.2," cells E49-H49.

[79] 21.2 percent = 11.64 percent / 55.0 percent (difference due to rounding).

instrument (12 percent to 18 percent) and more than double the upper end of Stryker's estimate (8.5 to 9.0 percent).

FIGURE 1
COMPARISON OF SIS'S "MARKET PENETRATION" RATE AND MR. BERO'S BENCHMARKS



Sources: Deutsche Bank estimates in Intuitive-00566055 at -056; Stryker estimates in STRREB00001810 and STRREB00001827; Bero Report estimates for SIS' effective market share.

2. Mr. Bero's assumptions fail to account for "real world" factors that likely would lower his "market penetration" rate and damages estimates

36. It is not surprising that Mr. Bero's implied "market penetration" rate exceeds his selected "benchmarks" given that many of the individual assumptions building up to the "market penetration" rate tend to inflate SIS's share of EndoWrist sales. Below, I highlight three

methodological flaws that individually and collectively lead to overstated "market penetration" rates for SIS in the "but-for" world.

a. Mr. Bero's "expiration rate of new sales units" is based on Intuitive's "top 5" X/Xi EndoWrist instruments, which likely cause Mr. Bero to overstate the expiration rate of all resettable EndoWrist instruments

37. Mr. Bero claims that the number of instruments that expire in a given year is proportional to the number of instruments sold in a given year, and he applies the ratio of expired instruments to all EndoWrist instrument sales at 60 percent.[80] He arrives at this ratio by dividing the annual projected expirations of Intuitive's "top 5" X/Xi instruments in 2018 and 2019 by the actual number of those instruments that Intuitive sold over the same time period.[81] Mr. Bero assumes that this expiration rate remains constant throughout his damages analysis, which spans 2020 through 2025, for both S/Si and X/Xi EndoWrist instruments.[82]

38. By focusing on the "top 5" X/Xi instruments to calculate his expiration rate and applying that rate across all EndoWrist instruments in his analysis, Mr. Bero uses an aggressive expiration rate that inflates his damages estimate when a more appropriate alternative is available within the source that he relies on. Mr. Bero acknowledges that the "Top 5" instruments account for a disproportionately high share of expired core instruments.[83] To the extent that the "Top 5" instruments are used more frequently than other EndoWrist instruments, one may expect that the expiration rate for these instruments would be relatively higher than the overall expiration rate across all instruments. Indeed, when I calculate the expiration rate of X/Xi core

---

80 Bero Report, Schedule 7.0.

81 Bero Report, Schedule 7.0. *See also* Morales 30(b)(6) (11/9/2022) Dep. Ex. 141 (Intuitive-00603992).

82 *See*, e.g., Bero Report, Schedule 2.2.

83 Bero Report, fn. 365 ("I also note the 'Top 5' EndoWrist instrument numbers comprise a large portion of core EndoWrist instrument unit sales, approximately 70% (73,469 expired 'Top 5' / 104,469 expired core) in 2018 and approximately 70% (100,376 expired 'Top 5' / 143,395 expired core) in 2019").

instruments (not exclusive to the "top 5") using Mr. Bero's methodology, I find that the expiration rate would be 50 percent instead of 60 percent.[84]

b. Neither the Bero Report nor the Sargent Report provides a proper analysis of hospitals that likely would take up SIS's reset services

39. Mr. Bero estimates that up to 70 percent of Vizient's members will "convert" to SIS repair" services and relies on the expert opinions of Jean Sargent.[85] Ms. Sargent's assessment is based on her industry "experience with Vizient and other GPOs," and she does not cite to independent sources or present corroborating evidence to support her claim.[86]

40. Evidence in the case indicates that, without 510(k) clearance from the Food and Drug Administration ("FDA"), hospitals and surgeons would be reluctant (or potentially unwilling) to use SIS's reset "services." For example, hospital administrators at Valley Medical Center, Larkin Community Hospital, and Franciscan Alliance stated that their hospitals do not purchase medical equipment that required FDA clearance and did not have it.[87] Surgeon testimony also

---

[84] I divided the projected number of expired X/Xi core instruments from the document cited by Mr. Bero by the total number of Intuitive 2018-2019 sales of core instruments identified in the same exhibit. *See* Morales 30(b)(6) (11/9/2022) Dep. Ex. 141 (Intuitive-00603992, tabs "US X&Xi Only" and "Tools Consumed") for the projected number of X/Xi expired core instruments and list of core instruments. *See also* "Core Instruments" workpaper for calculation of actual core instrument sales.

[85] Bero Report, p. 50. *See also* Expert Report of Jean Sargent, Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc., Case No. 3:21-cv-03496-VC, December 2, 2022 ("Sargent Report"), ¶ 57.

[86] Sargent Report, ¶ 57 ("In my experience with Vizient and other GPOs, where an ISO repair service provides substantial cost savings such as those offered by SIS's EndoWrist program, the combined efforts of the GPO and ISO providing such service would yield an overall conversion rate within the GPO member hospitals that I would anticipate to be about of 30% by the end of the first year, 70% by the end of the second year after the service is introduced, and 70%-80% thereafter. Examples of repair services where I have seen similar penetration rates within a GPO include electrophysiology diagnostic catheters, cables, endo shears, trocars, and laparoscopic instruments. Based on the substantial demand and combined reach of SIS and Vizient, SIS could have obtained similar penetration rates within Vizient for its EndoWrist repair services, had those services not been shut down by Intuitive.").

[87] *See*, e.g., Teal 30(b)(6) (11/18/2022) Dep. Tr. 37:17-25 ("THE WITNESS: As a practice, we would -- if the FDA requires a device to be cleared, we would -- we would purchase a

confirms that they expect that the medical devices that they use in surgery to have been cleared by the FDA.[88] Neither Mr. Bero nor Ms. Sargent discuss how FDA clearance would factor into the decisions of hospitals to purchase and surgeons to use SIS's reset EndoWrist instruments, which would affect Mr. Bero's assumed "conversion rate."

---

cleared device, if that's the question. Q. It -- your word is better than mine, so it is a practice at Valley that if a device requires FDA clearance, that it be cleared before it be purchased? A. Correct."); Early (10/6/2022) Dep. Tr. 58:13-18 ("Q. And am I right that -- does Lar- -- does Larkin have a policy that a medical device that has not been cleared by the FDA should not be used by the hospital? …A. To the best of my knowledge, yes."); Schimmel 30(b)(6) (11/16/2022) Dep. Tr. 51:24-52:8 ("Q. So for example, if a device is single use but has been remanufactured to be reused and the single use device required FDA clearance, would Franciscan purchase the remanufactured device if it lacked FDA clearance? … THE WITNESS: We would not purchase a device that wasn't FDA cleared, that we were aware of.").

[88] *See*, e.g., Francis (10/14/2022) Dep. Tr. 23:22-24:10. ("Q. Would you be willing to use an EndoWrist with a circumvented use counter on a patient? …A. No. Q. Why not? A. From what I understand, the number on a repeated use instrument is placed there within a recommendation based on…the engineers or elsewhere, that stated that was a normal number of uses that would basically give you normal use of the instrument. To go beyond that does not guarantee or in any way imply the instrument will continue to work as designed…"). *See also* Estape (10/22/2022) Dep. Tr. 57:18-58:7. ("Q. What do you remember about the meeting? A. Well, a company comes in and says that it can wipe out the number of uses on an instrument that's FDA cleared for only ten uses, I thought that was a pretty interesting meeting. Q. Why was it interesting to you? A. Well, you know, everything that we do in medicine is for safety, you know, and certain things are cleared only by the FDA, and it just seemed like…a very shady meeting where, you know, oh, I can take this and I can wipe off the uses for this instrument and you can keep using it forever. It just didn't seem -- you know, it didn't seem like a very up-and-up program. I've never heard of that before."); Estape (10/22/2022) Dep. Tr. 59:18-22. ("A…I'm not willing to do anything that's not FDA approved because, you know, anything that happens to the patient, they're going to come down on me for having used equipment that was not FDA approved at that time."); Maun (11/8/2022) Dep. Tr. 27:7-28:18.

c. Mr. Bero inflates his damages calculations by using a target collection rate of 70 percent

41. Mr. Bero uses a collection rate of 70 percent based on an Intuitive presentation in 2020 that reports results from a "small scale" pilot refurbishment program for 6 Xi instruments.[89] However, the number that Mr. Bero relies on is Intuitive's target collection rate; in its own financial analysis, Intuitive assumed a collection rate of 40 percent, which more closely aligns with the realized collection rates from the pilot program.[90] Todd Tourand, Intuitive's Director of Portfolio Management, cited low yield from collection efforts as one of the reasons Intuitive did not pursue the refurbishment program commercially beyond the pilot.[91] Intuitive consistently assumed a 40 percent collection rate in its 2020 "Reclamation and Refurbishment Cost" models that were developed during the pilot.[92]

E. IMPLEMENTING CORRECTIONS TO MR. BERO'S ASSUMPTIONS REDUCES DAMAGES BY AS MUCH AS 98.9 PERCENT

42. Table 3 summarizes Mr. Bero's lost profits damages estimates after correcting for some of his methodological and computational errors as discussed above. Correcting his computational errors alone would reduce damages by 3.7 percent (assuming Mr. Bero's "in-house model") to 11.2 percent (assuming Mr. Bero's "distributor model"). Adjusting Mr. Bero's expiration rate alone to include all "core" instruments (rather than only the "top 5") lowers damages by 16.6

---

89 Morales 30(b)(6) (11/9/2022) Dep. Ex. 143 (Intuitive 00626597 at -598-599, for details on the pilot, and -604, "Yields – Collection (target > 70%)").

90 Morales 30(b)(6) (11/9/2022) Dep. Ex. 143 (Intuitive 00626597 at -604 and -611).

91 Tourand (11/4/2022) Dep. Tr. 44:9-20 ("Q. Project Refurbished Instrument never became an actual commercial program at Intuitive; is that right? A. That's correct. Q. Why not? A. During the assessment of reclaiming instruments that were used at the hospital, it was observed that the collection of instruments that were used at the hospital resulted in low yield or low number of used instruments that the program didn't make sense to actually complete.").

92 Intuitive-00626145. *See also* Morales 30(b)(6) Dep. Ex. 143 (Intuitive-00626597 at -598). Intuitive had been considering a refurbishment program since at least August 2017 (Morales 30(b)(6) Dep. Ex. 139 (Intuitive-00603990).
Mr. Bero relies on one such model, Intuitive 00626597, to estimate the cost per reset instrument in Schedule 9.0.

percent. Adjusting Mr. Bero's collection rate to reflect Intuitive's assumed 40 percent collection rate instead of Mr. Bero's 70 percent target collection rate (while keeping all other assumptions in Mr. Bero's analysis) reduces damages by 42.9 percent. Implementing all three corrections decreases damages by 54.1 to 57.5 percent. Furthermore, removing Mr. Bero's damages associated with reset X/Xi EndoWrist sales leads to damages in the range of $0.46 million to $1.25 million, which is nearly 99 percent less than the lost profits damages that Mr. Bero presents in his report.

43. The damages estimates in Table 3 do not reflect all of the conceptual and methodological issues that I discussed above. SIS's purported lost profits likely would be further reduced (or completely eliminated) after accounting for those factors.

TABLE 3
LOST PROFITS DAMAGES ESTIMATES AFTER CORRECTING FOR THE COMPUTATIONAL AND METHODOLOGICAL ERRORS IN MR. BERO'S ANALYSIS

		Scenario 1		Scenario 2			
		No X/Xi Reset Delay		1-Year X/Xi Reset Delay		2-Year X/Xi Reset Delay	
		Value	% Change	Value	% Change	Value	% Change
(USD millions)		[1]	[2]	[3]	[4]	[5]	[6]
Distributor Model							
Original	[A]	40.91	n.a.	32.21	n.a.	22.42	n.a.
Correct Computational Errors	[B]	36.49	(10.8%)	28.60	(11.2%)	19.91	(11.2%)
Core Instrument Expiration Rate	[C]	34.11	(16.6%)	26.86	(16.6%)	18.70	(16.6%)
Intuitive-Modeled Collection Rate	[D]	23.38	(42.9%)	18.41	(42.9%)	12.81	(42.9%)
Combined Corrections	[E]	17.39	(57.5%)	13.63	(57.7%)	9.49	(57.7%)
Combined Corrections & No X/Xi	[F]	0.46	(98.9%)	0.46	(98.6%)	0.46	(98.0%)
In-House Model							
Original	[G]	102.62	n.a.	80.61	n.a.	56.16	n.a.
Correct Computational Errors	[H]	98.86	(3.7%)	77.65	(3.7%)	54.10	(3.7%)
Core Instrument Expiration Rate	[I]	85.58	(16.6%)	67.22	(16.6%)	46.83	(16.6%)
Intuitive-Modeled Collection Rate	[J]	58.64	(42.9%)	46.06	(42.9%)	32.09	(42.9%)
Combined Corrections	[K]	47.11	(54.1%)	37.00	(54.1%)	25.78	(54.1%)
Combined Corrections & No X/Xi	[L]	1.25	(98.8%)	1.25	(98.5%)	1.25	(97.8%)

Source: "Bero Sensitivities" workpaper.
Notes:
[2]: Percent change of correction relative to original values in [A][1] and [G][1].
[4]: Percent change of correction relative to original value in [A][3] and [G][3].
[6]: Percent change of correction relative to original value in [A][5] and [G][5].

III. MR. BERO'S DISGORGEMENT DAMAGES PERTAINING TO SIS'S CLAIMS UNDER THE LANHAM ACT ARE OVERSTATED

44. In his Lanham Act damages calculations, Mr. Bero multiplies the number of "but-for" reset EndoWrist instruments sold by SIS with Intuitive's average sales price per instrument (as opposed to SIS prices, which Mr. Bero used to calculate SIS's "but-for" revenues).[93] Specifically, Mr. Bero uses his estimates of SIS's "but-for" reset EndoWrist instruments under his Scenario 2, which assumes either a one- or two-year delay in SIS's ability to begin selling reset X/Xi EndoWrist instruments.[94]

[93] Bero Report, Schedule 16.2.

[94] Bero Report, pp. 4-5.

45. I understand that Mr. Bero's Lanham Act claim is based on one letter sent to Marin General Hospital by Intuitive regarding its utilization of a third-party reset service.[95] However, Mr. Bero does not offer a disgorgement amount associated with sales to only that customer. Instead, he claims that all of the instrument resets included in his lost profits damages calculation also represent disgorgement damages for Intuitive.[96] Mr. Bero provides no explanation of how that single letter that allegedly included a false claim would cause all of SIS's past and future lost sales, which seems entirely inconsistent with the assumptions of his lost profits analysis. That is, Mr. Bero assumes that SIS's lost profits were caused by instrument encryption and provisions in Intuitive's contracts with hospitals,[97] but they also *all* were caused by a letter to a single hospital.

46. Setting aside the absence of a causal relationship between Intuitive's alleged "false advertising" and SIS's lost sales of reset EndoWrist instruments, Mr. Bero's analysis of Lanham Act damages—which relies on his estimates of SIS's purported lost EndoWrist sales—is subject to many of the same methodological critiques as above. In addition, Mr. Bero presents disgorgement damages without subtracting out Intuitive's incremental costs that would be associated with SIS's purported lost sales of EndoWrist instruments.

47. I adjust Mr. Bero's analysis to correct for the same computational and methodological issues identified in Table 3 above. I also deduct Intuitive's incremental costs as a percentage of revenue based on Intuitive's contribution margin for instruments and accessories.[98] Just

---

[95] Bero Report, p. 59. I am aware that one other SIS customer received a similar letter. *See* SIS000093. My critique of Mr. Bero's analysis would hold even if he were to rely on this additional letter.

[96] Bero Report, pp. 1, 59. Mr. Bero's Lanham Act calculations are based exclusively on his "Scenario 2," in which he assumes at least a 1-year delay in SIS' ability to reset X/Xi instruments.

[97] Bero Report, p. 1.

[98] "Contribution margin" as used in the ordinary course of business by Intuitive is the ratio of "contribution costs" (including the cost of goods sold as well as associated commissions) to revenue. As I explain in my Antitrust Merits Rebuttal Report (*see* § IV.F), contribution margins do not accurately reflect Intuitive's competitive pricing and investment decisions. Using contribution margins here amounts to assuming the challenged sales could be removed without the need to forgo investments, which is conservative in favor of the Plaintiffs.

applying these adjustments, Mr. Bero's asserted Lanham Act damages would be reduced by up to 98.9 percent.

TABLE 4
LANHAM ACT DAMAGES ESTIMATES AFTER CORRECTING FOR ERRORS AND OMISSIONS IN MR. BERO'S ANALYSIS

		1-Year Delay in X/Xi Resets		2-Year Delay in X/Xi Resets	
		Values	% Change	Values	% Change
(USD millions)		[1]	[2]	[3]	[4]
Disgorgement Damages in the Bero Report	[A]	385.37	n.a.	268.22	n.a.
Damages after corrections for computational and methodological errors	[B]	176.89	(54.1%)	123.12	(54.1%)
Damages after corrections in [B] and removal of X/Xi EndoWrist instrument sales	[C]	5.70	(98.5%)	5.70	(97.9%)
Damages after corrections, removal of X/Xi EndoWrist sales, and net of incremental costs	[D]	4.32	(98.9%)	4.32	(98.4%)

Source: "Bero Sensitivities" workpaper.
Notes:
"Methodological errors" include correcting for Mr. Bero's assumed expiration rate by applying the expiration rate calculated over core instruments and assumed collection rate by using the rate modeled by Intuitive of 40 percent rather than the target rate of 70 percent.
[2][B]-[2][D]: Percent change of correction relative to original values in [A][1].
[4][B]-[4][D]: Percent change of correction relative to original values in [A][3].

Loren K. Smith, Ph.D.
January 18, 2023

EXHIBIT A

Smith Curriculum Vitae

Loren K. Smith

Principal and Practice Co-Leader of Global Antitrust & Competition
The Brattle Group
1800 M St NW
Suite 700 North
Washington, DC 20036
202-419-3354

EDUCATION

January 2006	University of Virginia, Ph.D. in Economics
May 2001	University of Virginia, M.A. in Economics
December 1996	Mississippi State University, B.B.A. in Marketing, *Magna Cum Laude*

PROFESSIONAL EXPERIENCE

April 2020–Present	Principal, The Brattle Group, Washington, DC
April 2016–March 2020	Executive Vice President, Compass Lexecon, Washington, DC Senior Vice President, April 2014 – March 2016 Vice President, April 2013 – March 2014
September 2005–March 2013	Staff Economist, U.S. Federal Trade Commission, Washington, DC
June 2002–May 2005	Instructor, University of Virginia, Charlottesville, VA *Courses:* Intermediate Microeconomics
September 1999–May 2001	Teaching Assistant, University of Virginia, Charlottesville, VA *Courses:* Principles of Microeconomics, Principles of Macroeconomics, Graduate Math-Economics, Graduate Econometrics, Intermediate Microeconomics Research Assistant, University of Virginia, Charlottesville, VA Edgar Olsen, Charles Holt

FIELDS OF SPECIALIZATION

Antitrust and Competition Economics
Applied Microeconomics
Industrial Organization
Applied Econometrics

TESTIMONY

Testimony as Economic Expert on behalf of Intuitive Surgical, In Re: *Rebotix Repair LLC v. Intuitive Surgical, Inc.,* in the United States District Court Middle District of Florida Tampa Division, Case No. 8:20-cv-02274, Deposition: November 3, 2021.

Testimony as Economic Expert on behalf of Intuitive Surgical, In Re: *Restore Robotics LLC, and Restore Robotics Repair LLC v. Intuitive Surgical, Inc.,* in the United States District Court Northern District of Florida Panama City Division, Case No. 5:19-cv-55, Deposition: October 21, 2021.

Testimony as Economic Expert on behalf of the Federal Trade Commission, In Re: *Federal Trade Commission and Commonwealth of Pennsylvania v. Thomas Jefferson University and Albert Einstein Healthcare Network*, In the Eastern District Court of Pennsylvania, Case No. 2:20-cv-01113-GJP, Deposition: August 26, 2020; Trial: September 15 and 16, and October 1, 2020.

REPORTS

Expert Report of Loren K. Smith, In Re: *United States of America, ex. rel. Sarah Behnke v. CVS Caremark Corporation et al.,* in the United States District Court Eastern District of Pennsylvania, Civil Action No. 2:14-cv-00824-MSG, December 9, 2022.

Expert Report of Loren K. Smith, In Re: *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.*, in the United States District Court Northern District of California, Case No. 3:21-cv-03496-VC, December 2, 2022.

Expert Reports of Loren K. Smith, In Re: *Restore Robotics LLC, and Restore Robotics Repair LLC v. Intuitive Surgical, Inc.,* in the United States District Court Northern District of Florida Panama City Division, Case No. 5:19-cv-55; Counterclaims Damages: August 20, 2021, Rebuttal Antitrust: September 27, 2021, Supplemental Rebuttal Report Antitrust Damages: December 23, 2022.

Expert Reports of Loren K. Smith, In Re: *Rebotix Repair LLC v. Intuitive Surgical, Inc.,* in the United States District Court Middle District of Florida Tampa Division, Case No. 8:20-cv-02274; Counterclaims Damages: July 26, 2021, Rebuttal Antitrust Merits and Rebuttal Antitrust Damages: August 30, 2021.

"Brief of Antitrust Economists as Amici Curiae in Support of Defendants-Appellants Urging Reversal," In the United States Court of Appeals for the Sixth Circuit; *St. Luke's Hospital et al., v. ProMedica Health System, Inc. et al.*; On Appeal from the United States District Court for the Northern District of Ohio; No. 3:20-cv-02533; March 1, 2021.

Expert Reports of Loren K. Smith, In Re: *Federal Trade Commission and Commonwealth of Pennsylvania v. Thomas Jefferson University and Albert Einstein Healthcare Network*, In the Eastern District Court of Pennsylvania, Case No. 2:20-cv-01113-GJP, Report: July 23, 2020, Rebuttal Report: August 20, 2020.

Expert Report of Loren K. Smith, In Re: *United States of America and the State of North Carolina v. The Charlotte-Mecklenburg Hospital Authority, d/b/a Carolinas Healthcare System*, In the District Court of North Carolina, Case No. 3:16-cv-00311-RJC-DCK, October 5, 2018.

Report to Congress Under Section 319 of the Fair and Accurate Credit Transactions Act of 2003, (with Beth Freeborn and Peter Vander Nat), December 2012.

SELECTED CONSULTING WORK RELATED TO ANTITRUST INVESTIGATIONS

Submitted a co-authored paper to the U.S. Department of Justice on the competitive implications of a vertical acquisition in the productivity software space (2022).

Submitted a co-authored paper to the U.S. Federal Trade Commission on the competitive implications of a merger in the specialty pharmacy services industry (2022).

Presented to the U.S. Department of Justice on the economic implications of a consumer products merger (2021).

Provided written and oral presentations to the U.S. Federal Trade Commission related to a proposed acquisition of a pipeline prescription pharmaceutical product (2020).

Presented and provided multiple written submissions to the U.S. Federal Trade Commission related to a proposed merger of two major hospital systems (2020).

Presented and provided multiple written submissions to the U.S. Federal Trade Commission related to a proposed merger of polyurethane foam manufacturers (2019).

Presented to the U.S. Federal Trade Commission related to a merger that, in part, proposed to combine existing and pipeline branded drugs with similar indications (2019).

Presented and provided a written submission to the U.S. Federal Trade Commission related to the proposed merger of branded pharmaceutical manufacturers (2019).

Presented to the U.S. Federal Trade Commission related to a proposed hospital merger (2018).

Submitted a white paper and gave a presentation to the U.S. Federal Trade Commission related to a proposed merger of factory-built home manufacturers (2018).

Presented to the U.S. Federal Trade Commission related to a proposed merger of food manufacturers (2017).

Presented to the U.S. Federal Trade Commission related to a proposed merger of personal and home cleaning manufacturers (2017).

Presented to the U.S. Department of Justice related to accusations of anticompetitive

exclusionary conduct against a hospital system (2017).

Provided economic and econometric analysis of alleged damages, the results of which were used in a mediation that reached a favorable settlement (2016–2017).

Submitted a coauthored white paper and participated in presentations to the U.S. Federal Trade Commission related to accusations of anticompetitive exclusionary conduct against a manufacturer of medical device inputs (2015-2016).

Gave multiple presentations to the U.S. Federal Trade Commission related to a proposed merger of retail chains (2014).

Provided economic analysis related to the proposed acquisition of two community hospitals. The results were submitted to the U.S. Federal Trade Commission (2014).

Developed empirical analyses that demonstrated a lack of competitive interaction with a proposed merger partner. The results were submitted to the U.S. Federal Trade Commission (2014).

Coauthored two white papers that were submitted to the U.S. Department of Justice related to a proposed hospital acquisition (2013).

Coauthored three white papers that were submitted to the U.S. Federal Trade Commission related to a proposed acquisition in the supermarket industry (2013).

Coauthored a white paper that was submitted to the U.S. Federal Trade Commission related to a proposed acquisition in the retail auto parts industry (2013).

As economic expert for the U.S. Federal Trade Commission, evaluated the likely competitive effects of a merger of data service providers (2011).

LITIGATION SUPPORT WORK

In support of Robert Willig and Jonathan Orszag, developed economic and econometric evidence, and assisted in the preparation of expert reports and testimony on behalf of the Defendants in Re: *Sidibe, et al. v. Sutter Health*, Case No. 3:12-cv-04854.

In support of Robert Willig and with Bryan Keating, developed economic and econometric evidence, and assisted in the preparation of expert reports and testimony on behalf of the Defendants in Re: *UFCW & Employers Benefit Trust v. Sutter Health, et al.*, Case No. CSG 14-538451.

In support of Mark Israel and with Theresa Sullivan, developed economic and econometric evidence on behalf of the U.S. Federal Trade Commission in Re: *Federal Trade Commission et al. v. Draftkings, Inc. and FanDuel Limited*, Civil Action No. 17-cv-1195 (KBJ).

In support of Jonathan Orszag, developed economic theories and assisted in the preparation of an expert report and deposition testimony on behalf of Plaintiffs in Re: *Innovation Ventures, LLC v. Nutrition Science Laboratories, LLC et al.*, Case No. 2:12-cv-13850.

In support of Mark Israel and with Theresa Sullivan, developed merger simulations and assisted in preparation of expert reports and testimony on behalf of Defendants in Re: *U.S. and Plaintiff States v. Anthem and Cigna*, Civil Action No. 1:16-cv-01493.

In support of Robert Willig, developed economic and econometric evidence, and assisted in preparation of expert reports and testimony on behalf of the Defendants in Re: *Methodist Health Services Corporation v. OSF Healthcare System*, Civil Action No. 1:13-dv-01054-SLD-JEH.

In support of Robert Willig and with Bryan Keating, developed economic and econometric evidence, and assisted in preparation of expert reports and testimony on behalf of the Defendants in Re: *Federal Trade Commission and Commonwealth of Pennsylvania vs. Penn State Hershey Medical Center and PinnacleHealth System*, Civil Action No. 1:15-cv-02362.

In support of Mark Israel, developed economic and econometric evidence, and assisted in the preparation of expert reports and testimony on behalf of the U.S. Federal Trade Commission in Re: *Federal Trade Commission et al. v. Sysco Corporation and USF Holding Corp.*, Civil Action No. 15-cv-00256 (APM).

PUBLICATIONS AND OTHER PUBLICLY AVAILABLE PAPERS

"Looking Behind the Mask: Economic Analyses of Physician Group Transactions" (with Josephine Duh, Daniel Fanaras, and Bogdan Genchev), 2022, American Health Law Association, available at https://www.americanhealthlaw.org/content-library/publications/briefings/f5e6c787-59d0-4aea-92c0-946ee4de1399/Looking-Behind-the-Mask-Economic-Analyses-of-Physi

"Trends in Consumer Shopping Behavior and their Implications for Retail Grocery Merger Reviews" (with Dimitri Dimitropoulos and Renée Duplantis), 2021, *Competition Policy International*

"4 Economic Takeaways From 6th Circ. ProMedica Decision" (with Josephine Duh), 2021, *Law360*, available at https://www.law360.com/articles/1438179/4-economic-takeaways-from-6th-circ-promedica-decision

"The Other Side of the Coin: Complementarity in Mergers of Multiproduct Firms" (with Craig Minerva and Peter Herrick), 2021, American Bar Association's *Antitrust Magazine*, available at https://www.americanbar.org/groups/antitrust_law/publications/antitrust-magazine-online/2021/october/the-other-side-of-the-coin/

"The Competitive Implications of Private Label Mergers," (with Matt Schmitt), 2021, American Bar Association's *Antitrust Law Journal*, available at https://www.americanbar.org/digital-asset-abstract.html/content/dam/aba/publishing/antitrust_law_journal/alj-833/schmitt-smith.pdf

"Understanding the Econometric Tools of Antitrust – With No Math!" (with Michael Cragg and Charles Gibbons), 2021, American Bar Association's *Antitrust*, available at https://www.americanbar.org/groups/antitrust_law/publications/antitrust_magazine/2021/atmag-spring2021-vol35-no2/
(*Concurrences* and the George Washington University Law School's Competition Law Center 2021 Antitrust Writing Awards Winner – Best Business Articles: Economics)

"Clarifying Bundle Markets and Distinguishing Them from Cluster Markets" (with Kevin Hahm), 2021, American Bar Association's *The Antitrust Source,* available at https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/2021/feb-2021/atsource-feb2021-full.pdf

"The Use of Econometrics in Merger Reviews" (with Christopher R. Rybak), 2020, American Bar Association's *Economics Committee Spring Newsletter*, available at https://www.americanbar.org/digital-asset-abstract.html/content/dam/aba/administrative/antitrust_law/aba-economics-committee-newsletter-spring2020.pdf

"Platforms, Entry, and Innovation,"(with Bryan Keating), 2019, Comment to Federal Trade Commission Hearings Announcement (Docket ID FTC-2019-0032), available at https://www.regulations.gov/document?D=FTC-2019-0032-0016

"Unilateral Effect Analysis of Health Care Markets," *Economics of Health Care Mergers & the Pharmaceutical Industry* (an ALHA Antitrust Practice Group Toolkit), 2019, available at https://www.healthlawyers.org/Members/PracticeGroups/Antitrust/Pages/default.aspx

"Do Retail Mergers Affect Competition? Evidence from Grocery Retailing," (with Dan Hosken and Luke M. Olsen), *Journal of Economics and Management Strategy*, Vol. 27, Iss. 1, pp. 3-22, Spring 2018.

"Toward a More Complete Treatment of Efficiencies in Merger Analysis: Lessons from Recent Challenges," (with Jonathan M. Orszag), *The Antitrust Source*, Vol. 16, No. 1, October 2016.

"The Prominence of Market Definition in Antitrust Evaluation and Litigation," (with Maria Stoyadinova), *Global Antitrust Economics: Current Issues in Antitrust Law and Economics*, Eds. Douglas H. Ginsburg and Joshua D. Wright, New York: Institute of Competition Law, 2016, pp. 103-116.

"Can Entry or Exit Event Studies Inform Horizontal Merger Analysis? Evidence from Grocery Retailing," (with Dan Hosken and Luke M. Olsen), *Economic Inquiry*, Vol. 54, Iss. 1, pp. 342-360, January 2016.

"Dynamics in a Mature Industry: Entry, Exit, and Growth of Big-Box Grocery Retailers," (with Dan Hanner, Dan Hosken, and Luke M. Olsen), *Journal of Economics and Management Strategy,* Vol. 24, Iss. 1, pp. 22-46, Spring 2015.

"Dynamics and Equilibrium in the Market for Commercial Aircraft," *Journal of Applied Econometrics*, Vol. 27, Iss. 1, pp. 1-33, February 2012.

"New Market Policy Effects on Used Markets: Theory and Evidence," *The B.E. Journal of Economic Analysis & Policy*, Vol. 9, Iss. 1 (Topics), Article 32, July 2009.

AWARDS AND HONORS

Who's Who Legal Thought Leaders – Competition Economists, 2023

Lexology Client Choice Award – Competition Economists, 2022

Who's Who Legal Competition – Competition Economists, 2019 - 2022

Who's Who Legal Competition: Future Leaders – Economists, 2017, 2018 (named one of the four "Most Highly Regarded" competition economists in North America in 2018)

Award for Outstanding Scholarship: for outstanding contributions to the economics literature and to the pursuit of scholarship at the Federal Trade Commission, 2012

Janet D. Steiger Award: for outstanding contributions to the Pay-for-Delay Team, Federal Trade Commission, 2012

Predoctoral Fellowship, Bankard Fund for Political Economy, University of Virginia, 2003-2004

Research Grant, Darden Business School, University of Virginia, 2002

Graduate Fellowship, University of Virginia, 1999–2002

MISCELLANEOUS

REFEREE

International Journal of Game Theory

International Journal of Industrial Organization

Economic Theory

Journal of Policy Analysis and Management

TEACHING

Full Courses:

Econonometrics – Johns Hopkins University, 2008

Intermediate Microeconomics – University of Virginia, 2002–2005

Mini Courses:

"Mergers" with Miguel de la Mano, Sean Ennis, and Nicolas Hill – Fordham Law School, 2012

"The Economics of Vertical Restraints" – GHV, Budapest, HU, 2010

"Quantitative Methods for Merger Investigation" with Keith Brand – CADE, Brasilia, BR, 2009

"Quantitative Methods for Antitrust Economists" – Competition Commission, Pretoria, ZA, 2007

"Introduction to Quantitative Methods for Antitrust Lawyers" – FTC, 2006, 2007, and 2008

PRESENTATIONS AND SEMINARS

Fordham Competition Law Institute – 49th Annual Conference on International Antitrust Law and Policy and Antitrust Economics Workshops, New York, NY

American Bar Association Antitrust Law Section and Health Law Section 2022 Antitrust in Healthcare Conference – Pharma Conduct Trends: Biosimilars, Generics, Pay-for-Delay, Arlington, VA

Concurrences 6th Global Antitrust Economics Conference – Acquisitions in High-Tech Space: Market Power and Innovation Issues, Webinar

Fordham Competition Law Institute – 48th Annual Conference on International Antitrust Law and Policy and Antitrust Economics Workshops, New York, NY

American Bar Association Antitrust Enforcement Priorities for the Healthcare Industry in 2021 Roundtable

Troutman Pepper – Antitrust Economics – The Building Blocks, Webinar

American Health Law Association Education Center – Antitrust Enforcement Update on Hospital and Health System Mergers, Webinar

Fordham Competition Law Institute – 47th Annual Conference on International Antitrust Law and Policy and Antitrust Economics Workshops, Webinar

Concurrences and Fordham University School of Law – Antitrust in Life Sciences Conference, Webinar

American Bar Association Economics Fundamentals, Webinar

15th Annual Kirkland Antitrust & Competition Institute – Intersection of Antitrust and Everything Else, Washington, DC

Pepper Hamilton's Annual Antitrust CLE Event, Philadelphia, PA

Fordham Competition Law Institute – 44th Annual Conference on International Antitrust Law & Policy, New York, NY

International Industrial Organization Conference, Boston, MA

GCR Live 2nd Annual Antitrust Litigation USA, New York, NY

The Global Antitrust Economics Conference – George Mason School of Law, Arlington, VA

Compass Lexecon – Economics Seminar, Washington, DC

Southern Economic Association – Annual Meeting, New Orleans, LA

University of Maryland – Econometrics Seminar, College Park, MD

Bureau of Labor Statistics – Empirical IO Seminar, Washington, DC

Drexel University – Industrial Organization Seminar, Philadelphia, PA

American Social Sciences Association – Annual Meeting, Philadelphia, PA

Southern Economic Association – Annual Meeting, New Orleans, LA

University of Virginia – Microeconomics Seminar, Charlottesville, VA

International Industrial Organization Conference, Chicago, IL

COMMUNITY ACTIVITIES

Tutor, Community Club, Washington, DC, 2007–2011

CITIZENSHIP

United States

EXHIBIT B
Materials Considered

Bates-Stamped Documents

[1] Intuitive-00103407
[2] Intuitive-00367019
[3] Intuitive-00566055
[4] Intuitive-00581814
[5] Intuitive-00595673
[6] Intuitive-00603990
[7] Intuitive-00603992
[8] Intuitive-00626145
[9] Intuitive-00626597
[10] REBOTIX061127
[11] REBOTIX162404
[12] REBOTIX175326
[13] Restore-00094918
[14] SIS000093
[15] SIS095115
[16] STRREB00001810
[17] STRREB00001827

Case Documents

[18] Complaint, *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.* , Case No. 5:21-cv-03496-SK, May 10, 2021.

Expert Reports and Exhibits

[19] Expert Antitrust Merits Rebuttal Report of Loren K. Smith, Ph.D., *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.* , Case No. 3:21-cv-03496, January 18, 2023 and materials cited therein.
[20] Expert Antitrust Merits Report of Loren K. Smith, Ph.D., *Rebotix Repair LLC v. Intuitive Surgical, Inc.* , Case No. 8:20-cv-02274, August 30, 2021 and materials cited therein.
[21] Expert Damages Rebuttal Report of Loren K. Smith, Ph.D., *Rebotix Repair LLC v. Intuitive Surgical, Inc.* , Case No. 8:20-cv-02274, August 30, 2021 and materials cited therein.
[22] Expert Rebuttal Report of Loren K. Smith, Ph.D., *Restore Robotics LLC, Restore Robotics Repair LLC, and Clif Parker Robotics LLC v. Intuitive Surgical, Inc.* , Case No. 5:19-cv-55, September 27, 2021 and materials cited therin.
[23] Expert Report of Dr. Russell L. Lamb, *Surgical Instrument Service Company, Inc. vs. Intuitive Surgical, Inc.* , Case No. 5:21-cv-03496, December 2, 2022.
[24] Expert Report of Jean Sargent, *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.* , Case No. 3:21-cv-03496-VC, December 2, 2022.
[25] Expert Report of Loren K. Smith, Ph.D., Rebotix Repair LLC v. Intuitive Surgical, Inc., Case No. 8:20-cv-02274, July 26, 2021 and materials cited therein.
[26] Expert Report of Loren K. Smith, Ph.D., *Restore Robotics LLC and Restore Robotics Repair LLC v. Intuitive Surgical, Inc.* , Case No. 5:19-cv-55, August 20, 2021 and materials cited therein.
[27] Expert Report of Loren K. Smith, Ph.D., *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.* , Case No. 3:21-cv-03496-VC, December 2, 2022 and materials cited therein.
[28] Expert Report of Richard F. Bero, CPA, CVA, *Surgical Instrument Service Company, Inc. v. Intuitive Surgical, Inc.* , Case No. 3:21-cv-03496-VC, December 2, 2022 and backup materials.
[29] Expert Report of Robert Mills, *Rebotix Repair LLC vs. Intuitive Surgical, Inc.* , Case No. 8:20-cv-02274, July 26, 2021 and backup materials.

Depositions

[30] Anthony McGrogan (in *Rebotix*) Deposition Transcript and Exhibits, June 7, 2021
[31] Chris Gibson (in *Rebotix*) Deposition Transcript and Exhibits, June 22, 2021
[32] Clifton Parker Deposition Transcript and Exhibits, October 25, 2022
[33] Colin Morales 30(b)(6) Deposition Transcript and Exhibits, November 9, 2022
[34] Dipen Maun Deposition Transcript and Exhibits, November 8, 2022
[35] Glenn Papit (in *Rebotix*) Deposition Transcript and Exhibits, June 2, 2021
[36] Greg Posdal 30(b)(1) Deposition Transcript and Exhibits, November 1, 2022
[37] Greg Posdal 30(b)(6) Deposition Transcript and Exhibits, November 1, 2022
[38] Imron Zafar Deposition Transcript and Exhibits, November 1, 2022
[39] John Francis Deposition Transcript and Exhibits, October 14, 2022
[40] Judith Schimmel 30(b)(6) Deposition Transcript and Exhibits, November 16, 2022
[41] Keith Johnson 30(b)(6) Deposition Transcript and Exhibits, October 27, 2022
[42] Kevin May Deposition Transcript and Exhibits, November 3, 2022
[43] Mark Early Deposition Transcript and Exhibits, October 6, 2022
[44] Ricardo Estape Deposition Transcript and Exhibits, October 22, 2022
[45] Rick Teal 30(b)(6) Deposition Transcript and Exhibits, November 18, 2022
[46] Ron Bair (in *Rebotix*) Deposition Transcript and Exhibits, May 24, 2021
[47] Stan Hamilton Deposition Transcript and Exhibits, November 4, 2022
[48] Todd Tourand Deposition Transcript and Exhibits, November 4, 2022

Literature

[49] Carlton, Dennis W., and Jeffrey M. Perloff. *Modern Industrial Organization, Fourth Edition* (Boston: Pearson Education, Inc., 2015)
[50] Curran, Jack. "Medical Equipment Repair & Maintenance Services," IBISWorld, Industry Report OD4964, December 2021
[51] Pindyck, Robert S., and Daniel L. Rubinfeld. *Microeconomics, Eighth Edition* (New Jersey: Pearson Education, Inc., 2013)
[52] Tirole, Jean. "The Analysis of Tying Cases: A Primer," *Competition Policy International 1* , No. 5 (2005)

Public Sources

[53] "510(k) Premarket Notification Summary, Re: K210478," U.S. Food and Drug Administration, accessed January 18, 2023, https://www.accessdata.fda.gov/cdrh_docs/pdf21/K210478.pdf

Websites

[54] "FDA Clearance to Remanufacture Da Vinci Robotic Instruments Could Present Hospitals with Substantial Savings," PRWeb, accessed January 17, 2023, https://www.prweb.com/releases/fda_clearance_to_remanufacture_da_vinci_robotic_instruments_could_present_hospitals_with_substantial_savings/prweb18980465.htm